FRP Inspection

TOTAL PETROLEUM
Colorado Refining Company

August 7, 1995

TDD# Z2-9403-05
Facility Response Plan Inspections

Submitted to:
Martha Wolf, Task Monitor
U.S. EPA Region VIII

Prepared by:
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U.S. EPA Technical Assistance Team - Zone II

Facility Response Plan Inspection

COLORADO REFINING COMPANY/TOTAL PETROLEUM
COMMERCE CITY, COLORADO

FRP08A0052
Latitude 104° 41' 49" W
Longitude 39° 47' 55" N

On August 7, 1995, Martha Wolf, U.S. EPA Region VIII, and Amy Law and Brian Wanzenried, 8(a) TAT - Zone II, inspected the Colorado Refining Company facility, owned by Total Petroleum, in Commerce City, Colorado. Randy Matsushima, Environmental Manager, Michael A. Miller, Environmental Chemist with duties on the Hazardous Materials (Hazmat) Team, and Jerry Bennet, Safety Manager, represented Colorado Refining Company.

The Commerce City refinery has a storage capacity over 50 million gallons and a refining capacity of over 30,000 barrels per day. The facility is within a quarter mile of the South Platte River and a spill could reach the river via an unnamed stream (Photo 1) that flows north and discharges into the South Platte River. The facility is also located within several hundred feet of Sand Creek, which discharges into the South Platte River.

The facility maintains four copies of the Facility Response Plan (FRP) on-site: the safety office, the main office, Hazmat Team (Michael Miller's) office, and the Incident Command trailer. A fifth copy is kept at the corporate offices. The Local Emergency Planning Committee does not have a copy of the FRP, although one was offered to them.

The facility has in place an Emergency Response Plan (ERP) to meet other planning requirements. The ERP has been included in the Emergency Response Action Plan (ERAP) and in the body of the FRP because it forms the basis for all facility response activities.

The facility's Hazmat Team receives annual training on the FRP. In discussions with Mr. Matsushima and Mr. Miller, it was stated that there is no chain-of-command within the Hazmat Team; the entire team is trained in all tasks. The team as a whole reports to the shift foreman, and all clean-up operations are monitored by health and safety personnel.

The facility does not have significant oil spill response equipment. The majority of the refinery's response equipment is fire fighting related. Colorado Refining Company's limited oil spill response equipment appeared adequate. Included among the equipment are personal protective equipment, earth moving equipment and four 50-foot on-water containment booms with six-inch floats and eight-inch skirts (Photo 2).

The Colorado Refining Company relies on their oil spill response contractor, Reidel Environmental Services (RES), to supply most equipment. In the case of a spill, RES can supply 1,000 feet of containment boom in one hour. The facility also has mutual aid agreements with the South Adams County Fire Department (SACFD) and the Conoco Refinery across the street.

The facility's seven person Hazmat Team also serves as the spill response team. The Hazmat Team manages spills using the Incident Command System (ICS). During past emergencies, the ICS was tested and worked well, with the exception of communications. The communications problems have been corrected.

Evacuation plan diagrams (Attachment B) are posted in control rooms throughout the Colorado Refining Company facility. The plans include evacuation routes and assembly points, but they do not have alternative evacuation routes. SACFD is in charge of public evacuations, although the area around the refinery is commercial. The refinery tests the fire and evacuation signals weekly.

The facility's qualified individual (QI), Mike Matthews, was interviewed and appeared knowledgeable of the QI duties and responsibilities. The QI has the authority to commit the facility's resources towards a spill response and cleanup. The QI's formal training is mostly fire fighting related, but includes some hazardous materials. The QI has also received significant on-the-job training.

The facility's planning distance is 11.26 miles along Sand Creek and the South Platte River. However, this planning distance is based on a summer storm discharge rate of 300 cubic feet/second, rather than a spring melt discharge rate of up to 5,000 cubic feet/second. This higher rate of flow will significantly increase the hydraulic radius, and therefore, the planning distance.

Within current planning distance, the facility identified the Thornton augmentation water intake, bald eagles, and a medical clinic on 58th Street as vulnerable to a worst-case discharge. Brighton Boulevard, Interstate 270, and the Union Pacific, Burlington Northern and Amtrak railroads were not addressed in the FRP.

The Analysis of the Potential for an Oil Spill addressed the facility's spill history and earthquake zone, but it did not address the horizontal range of a spill, vulnerability to natural disaster, and tank's ages.

The small and medium discharge scenarios took into account facility loading and unloading, maintenance, piping and pumping operations. The discharges did not take into account factors that may affect response efforts. The facility stated that they are capable of responding to a small or medium discharge. Facility operators handle most spills. If the operators cannot handle a spill, the Hazmat Team would respond to it. The worst-case discharge is the only spill scenario for which the facility would request outside help.

The facility determined that their worst-case discharge of 8,526,000 gallons of crude oil would be incurred by the failure of their largest tank, Tank #6 (Photo 3), and its secondary containment. The facility only performed a worst-case discharge calculation for one oil group (group 2 light crudes). The facility has several other oil groups including group 1 for gasoline and group 4 for heavy crudes and fuel oils. Also, the facility needs to identify what conditions might impede a worst-case discharge response. Variables such as facility access, weather, river stage, and availability of equipment should be examined.

One of the refinery's lead pumpers was interviewed by the inspection team. The information received from the pumper corresponded with the FRP. The lead pumper appeared to have an adequate understanding of his role in an emergency.

In the event of a discharge, vacuum trucks would discharge recovered oil and water into an oil recovery tank (Photo 4) with a 200 gallon/minute pump. The facility could pump the recovered oil and water to an off-specification tank and then a crude oil tank for storage and re-refining. For storing on-shore recovered oil and debris, the facility has roll-offs and drums. Facility personnel seemed knowledgeable of hazardous waste storage and disposal regulations, even though the FRP does not address these regulations.

Part IV of the Response Resources Calculations is incorrect: Tier I should be 1,500 bbls/day; Tier II should be 3,000 bbls/day; Tier III should be 3,000 bbls/day. This will reduce the response capability, which must be contracted, and increase the amount that must be identified beforehand.

The facility's containment and drainage corresponded with the information in the FRP. The FRP, however, did not provide detail on the facility's containment and drainage.

The facility performs daily gauging of its tanks and visually inspects the tanks during gauging. Any evidence of leaks are noted on the gauge reports. The gauge reports are stored on-site. Secondary containment inspections, tank inspections, and tank testing are available on-site. Spill response equipment inventory and location are included in the FRP, but references as to the location of tank inspection records, secondary containment inspection records, and all response equipment records need to be included.

The facility has performed QI notification drills, and actual spill responses have been used as unannounced exercises. The "Qualified Individual Notification Exercise Worksheet" and the "Internal Exercise Documentation Form" are included as Attachments C and D, respectively. The facility has a timeline for their drills, exercises and training (Attachment E). Two equipment deployment exercises, a tabletop exercise and four individual notification exercises are scheduled between August and December. The facility has also performed hazmat exercises. They tested their ICS during simulated chlorine and liquified petroleum gas releases.

Deficiencies to be addressed:

- The facility needs to define more clearly how the Hazmat Team uses the ICS without an established chain-of-command [112.21].

- The facility needs to perform worst-case discharge scenario calculations for each oil group stored at the facility [112 Appendix E 7.2.1]. The facility performed the worst-case discharge scenario calculation for crude oil (i.e., oil group 2), but not for other oil groups. At least ten percent of the facility's oil storage is oil group 1. The facility may also have at least ten percent storage of other oil groups.

- The facility needs to document their spill response evaluations [PREP Guidelines page 2-10]. The facility used an actual spill response as an unannounced drill. The facility performed a critique of the incident, but the critique was not formally documented. An actual spill response can be used as an unannounced drill if an evaluation is performed.

- The facility evacuation plan diagram (Attachment B) diagram does not have spill flow directions, alternate evacuation routes, location of alarm notification systems and command centers [112 Appendix F 1.3.5.1].

- The facility needs to include an inspection checklist for spill response equipment and secondary containment [112 Appendix F 1.5.1.2 and 1.7.3].

- The vulnerability analysis did not address transportation routes [112 Appendix F 1.4.2(11)]. The facility is near several significant transportation routes including: Brighton Boulevard, Interstate 270 and the Union Pacific, Burlington Northern and Amtrak Railroads. Although a spill might not directly affect these transportation routes, an indirect effect might be flammable and toxic gases, possibly resulting in closing the transportation route.

- The facility needs to ensure that their contractor's equipment is designed to operate in the conditions expected in the facility's geographic area [112 Appendix E 2.1]. The contractor's boom identified in the FRP has a twelve-inch skirt. A boom with a twelve-inch skirt may not operate well in the unnamed stream, Sand Creek and the South Platte River. Booms of this skirt size are usually available in 50 or 100 foot lengths. Boom this long may also be difficult to deploy properly in the small stream and even Sand Creek.

- Documentation of mutual aid agreements with SACFD and Conoco Refinery needs to be included in the FRP [112 Appendix E 9.1].

- The facility needs to provide documentation, or references to the location of tank, secondary containment and response equipment inspection records [112.20(h)(8)(i)].

- The facility needs to determine the outfall from the drain to South Platte [112 Appendix F 1.7.3(.2) and (.6)].

- Planning distance needs to be recalculated using high flow rates at or near flood stage [112 Attachment C-III].

- Parts IV and V of Required Response Resources need to be recalculated.

Attachment A

PHOTOGRAPHS

Facility: Colorado Refining Company **Inspection Date:** August 7, 1995

Photo 1 -- Unnamed Creek at Risk from an Oil Spill

Photographer: Brian Wanzenried

Photo 2 -- Eight Inch Skirt Boom

Photographer: Brian Wanzenried

Photo 3 -- Worst-Case Discharge Scenario: Tank 6

Photographer: Brian Wanzenried

Photo 4 -- Oil Recovery Tank

Photographer: Brian Wanzenried

Facility: Colorado Refining Company **Inspection Date:** August 7, 1995

Photo 5 -- Hazmat Trailer

Photographer: Brian Wanzenried

Photo 6 -- Crude Unloading Station

Photographer: Brian Wanzenried

Photo 7 -- Path to Unnamed Creek

Photographer: Brian Wanzenried

Photo 8 -- Path to Unnamed Creek

Photographer: Brian Wanzenried

Photo 9 -- Fire Truck

Photographer: Brian Wanzenried

Photo 10 -- Hazmat Equipment Storage

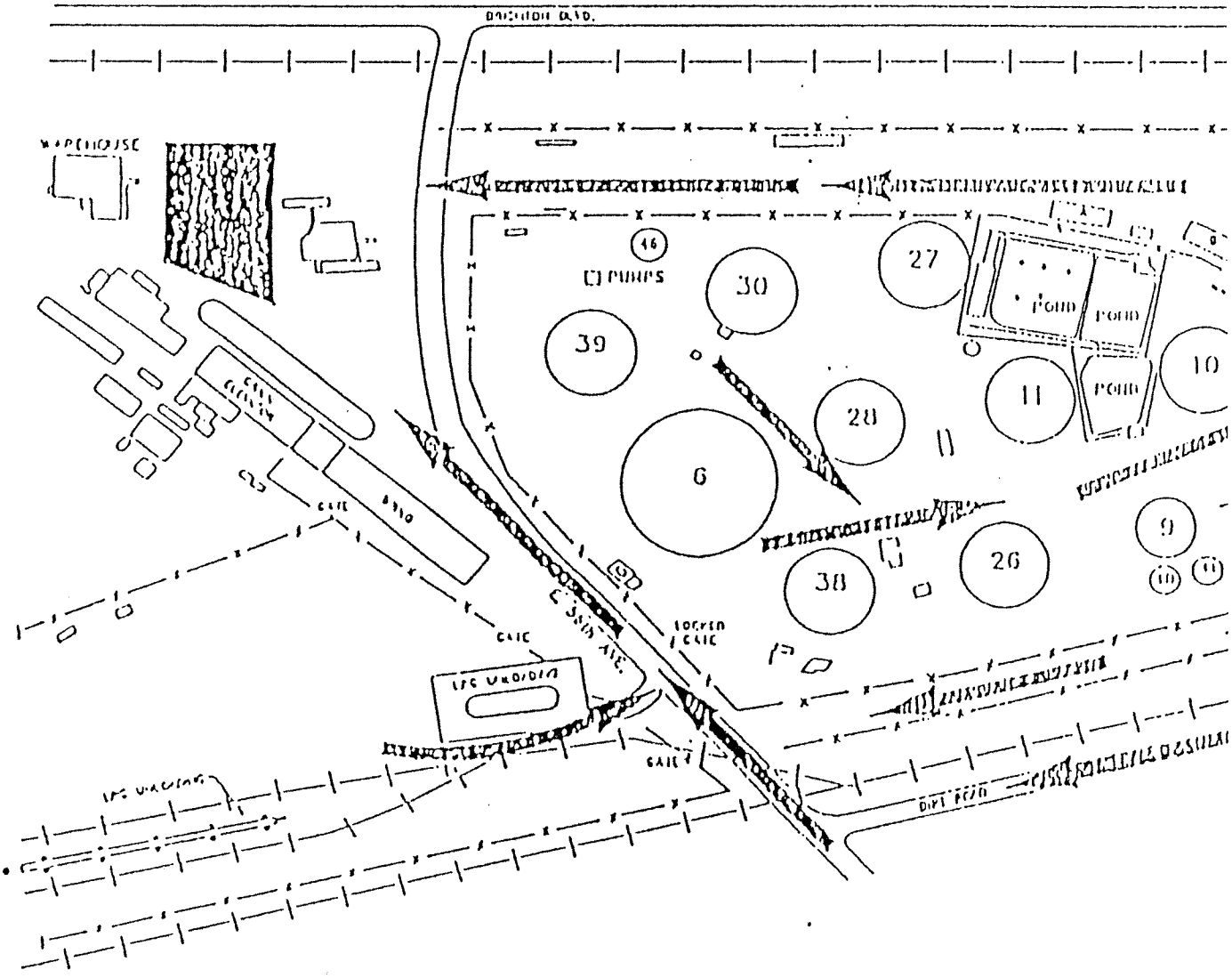
Photographer: Brian Wanzenried

Attachment B

EVACUATION PLAN DIAGRAM

COLORADO

EVAC



REPORTING:

TO REPORT A FIRE, INJURY, SPILL OR

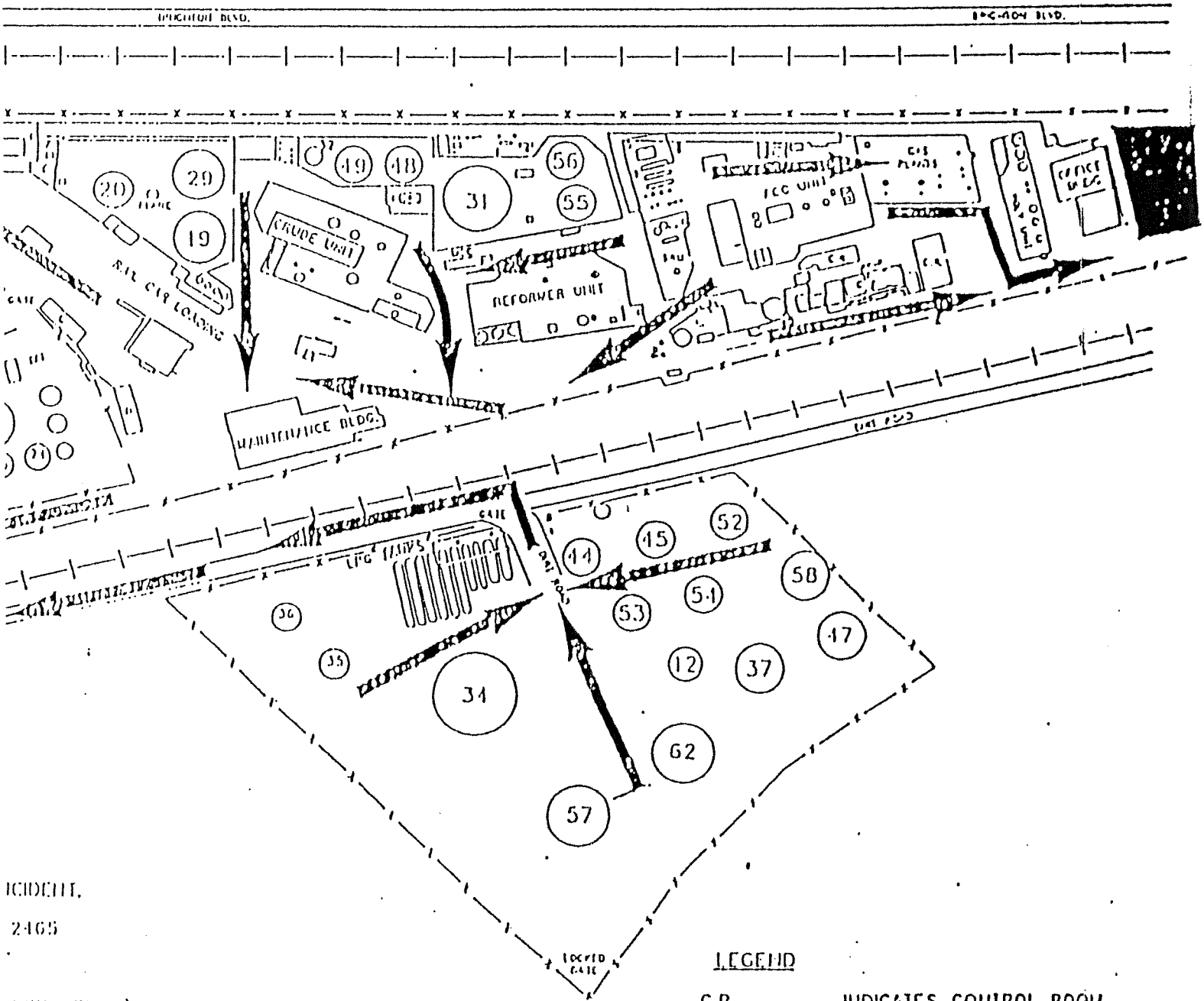
1. CALL THE CONTROL ROOM AT 2465
   OR CALL UNIT 11 ON THE MOTOROL
   OR NOTIFY A CRC EMPLOYEE.
2. GIVE THE NATURE OF THE INCIDENT
   GIVE THE LOCATION.
   GIVE YOUR NAME.

NOTES:

DO NOT DRIVE OR WALK THROUGH UNI

FINING COMPANY

,TION PLAN



ICIDENT.

2465

JURY, SPILL)

APOR CLOUDS.

Attachment C

QUALIFIED INDIVIDUAL NOTIFICATION EXERCISE WORKSHEET

QUALIFIED INDIVIDUAL NOTIFICATION EXERCISE WORKSHEET

DATE: July 5, 1995

NAME OF INDIVIDUAL WHO PLACED TEST PAGE: Doug Speltz

TIME OF TEST PAGE: 12:11 pm.

NAME OF INDIVIDUAL RETURNING TEST PAGE - TIME OF CALL

1. Jerry Bennett out of town
2. Mike Mathews ✓ 12:13 pm
3. Randy Matsushima
4. Steve Sondergard
5. Jay Cleary ✓ 12:20 pm
6. Mike Miller (Miller Lite) ✓ 12:15 pm
7. Billie Rice Vacation
8. Eric Van Syoc Vacation
9. Mark Grajeda ✓ 12:40 pm
10. Alan Standeford Out of town
11. Art Suppi @ PLANT - ON SHIFT
12. Albert Lattany ✓ 12:15 pm

TEST PAGE: 05556666

Mike McCallum 12:14 pm
Bill Wortham 12:14 pm
Ray Deiel 12:15 pm
Mike Kohn 12:15 pm
Clark Szoesz 12:18 pm
Greg Bauer 12:20 pm
Scott ~~Klingler~~ 12:20 pm — Called wrong Phone Number

Attachment D

INTERNAL EXERCISE DOCUMENTATION FORM

TOTAL PETROLEUM, INC.
DENVER REFINERY

INTERNAL EXERCISE DOCUMENTATION FORM

Equipment Deployment Exercise

Date(s) performed: 6/11/95

Exercise or actual response? Actual Response

If an exercise, announced or unannounced? _____

Deployment location(s):

The #1 crude unloading dock down to the northeast corner of the Pumpers shack.

Time started: ≈ 1:30 A.M.

Time completed: ≈ 9:30 A.M.

Equipment deployed was:

X Facility-owned

_____ Oil spill removal organization-owned if so, which OSRO? _____

_____ Both

List type and amount of all equipment (e.g., boom and skimmers) deployed and number of support personnel employed:

one front loader, one Vacuum truck, dozen "Squeegies", half-dozen shovels, half-dozen brooms, dirt, 30 (3cLB) bags of absorbent, emergency response truck, and approximately 10 people including HAZMAT TEAM members: Miller Lite, Billie Rice, Burt Lattany

Was the equipment deployed by personnel responsible for its deployment in the event of an actual spill? YES

Was all deployed equipment operational? If not, why not?

Some of the Squeegie blades fell off because they are held on by only two bolts. We are looking into better ways of attaching the blades. We had a plentiful supply of squeegies, so the few that broke did not hinder cleanup activities.

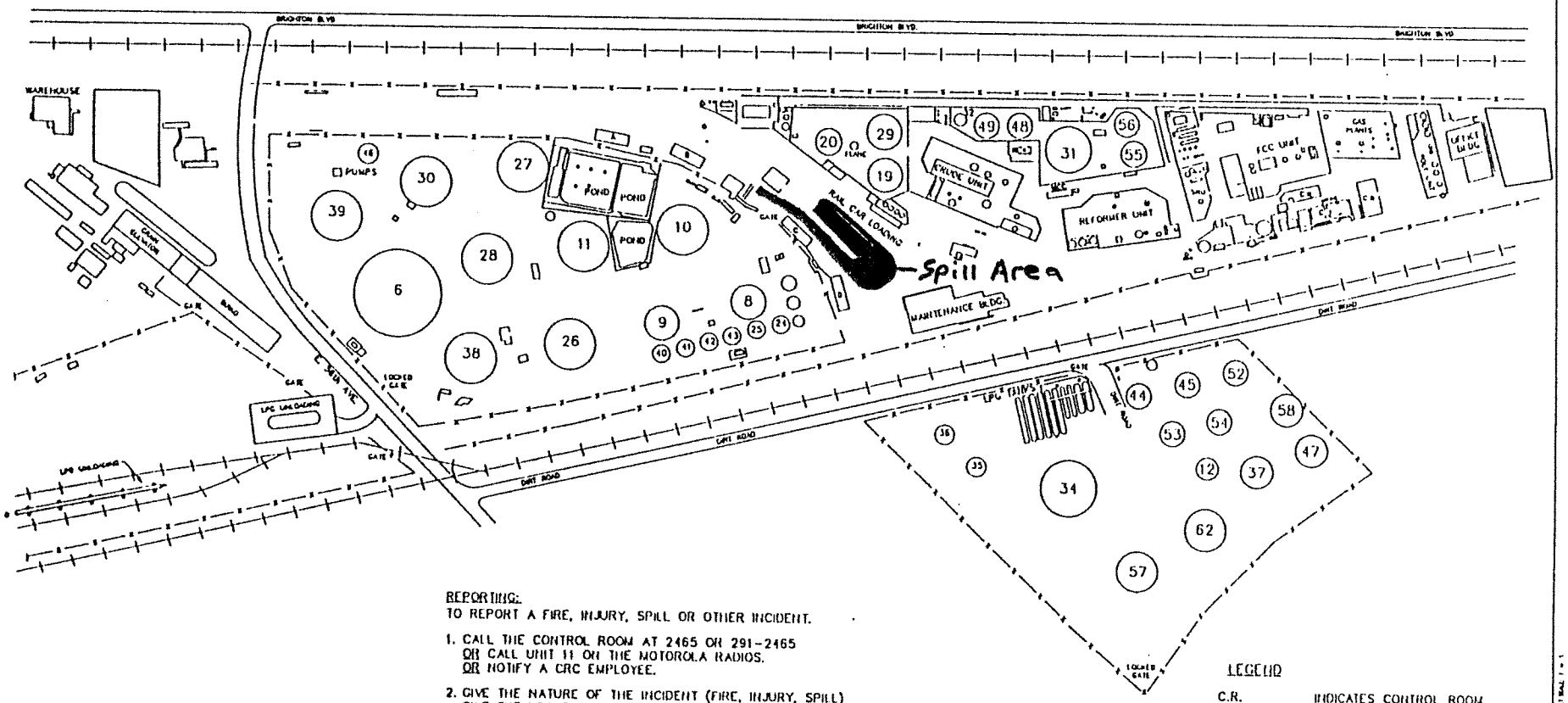
Identify which components of your response plan were exercised during this particular exercise: 1) Personnel roles, lines of authority, and communication
2) Site security and control
3) Decontamination procedures
4) Emergency Alerting and Response procedures
5) Personal Protective clothing and emergency equipment

Attach a description of lesson(s) learned and person(s) responsible for follow up of corrective measures.

Randy Matsushima
Certifying Signature

Retain this form and other documentation related to this exercise on file for a minimum of 3 years (for USCG/RSPA/MMS) or for a minimum of 5 years (for EPA)

COLORADO REFINING COMPANY



REPORTING:
TO REPORT A FIRE, INJURY, SPILL OR OTHER INCIDENT.

1. CALL THE CONTROL ROOM AT 2465 OR 291-2465
   OR CALL UNIT 11 ON THE MOTOROLA RADIOS.
   OR NOTIFY A CRC EMPLOYEE.

2. GIVE THE NATURE OF THE INCIDENT (FIRE, INJURY, SPILL)
   GIVE THE LOCATION.
   GIVE YOUR NAME.

NOTES:
DO NOT DRIVE OR WALK THROUGH UNKNOWN VAPOR CLOUDS.

COLORADO REFINING COMPANY
(TOTAL PETROLEUM, INC.--DENVER REFINERY)
5800 BRIGHTON BOULEVARD
COMMERCE CITY, COLORADO 80022
OIL SPILL REPORTING FORM
(Use reverse side of this sheet, if necessary)

Prepared by Douglas B Spelts Title: Operation Supervisor
Date: June 11, 1995 Time of Spill: Before 1:15 Am Product: crude oil

Location of Spill #1 South Crude Unloading dock
Extent of Spill : From S. Crude Unloading dock to "D" dock to pumper's Shack

Quantity Spilled: 30-100 bbls Qty/Per Cent Recovered: 50-100 BBLs

How much of the of the spill went off-site? 0 bbls
How much of the spill went into Sand Creek? 0 bbls
Note: If "yes," notify the city of Thornton as soon as possible.
Cause: _____

Actions taken to control spill: Called GREG BAUER, Mike Miller, Randy Matsushima, DENNIS Keith. Bauer Called Mechelay HAZMAT/FIRE Brigade personnel and operators assisted in the Clean up.

Discovered by: Glen Friedly Reported to: Douglas Spelts

EMERGENCY COORDINATOR(S) NOTIFIED (Include time called):

Mike Mathews (Bauer) 1:20 A.M. Jerry Bennett _____

Randy Matsushima 1:22 am Dick Forsyth Keith called at 1:30 A.M.

Jay Cleary _____ Steve Sondergard _____

Mtce Supervisor on call Mechelay 1:45 pm

OFFICIAL NOTIFICATIONS MADE (Record the person's name):

EPA _____ Date/Time: _____

CDH _____ Date/Time: _____

SACCC _____ Date/Time: _____

City of Thornton _____ Date/Time: _____

National Response Center _____ Date/Time: _____

Weather Conditions: Cool Night 54° F

Other Notes: Bauer Called the HAZMAT Team out

(Rev. 3/95)

COLORADO REFINING COMPANY

Incident Report

TO: SAFETY MANAGER

Date of Incident: June 11, 1995 Time: 1:20 AM

Employees Involved: Glen Friedly
Randy HAYES

Department: Pumping Location: #1 South Crude Unloading dock

Supervisor Responsible for Area Where Incident Occurred:
Douglas B Spelts

Description of Incident: 20-100 BBls of possibly S.E Colorado Crude Spill at #1 South Crude Unloading dock, over to "D" Loading dock to the pumper's shack.

Why Incident Happened: Valve left opened at #1 South Crude Unloading dock before 1:15 A.M.

Corrective Action Taken to Prevent a Reoccurance. What Can be Done or What Will You Do?

Comments: SEE ATTACHED MEMO.
Clean up started at 3:AM.

Douglas B Spelts
Filled Out By

June 11, 1995
Date

White Copy-Department Yellow Copy-Employee Pink Copy-File

COLORADO REFINING COMPANY

5800 BRIGHTON BLVD
COMMERCE CITY, CO 80022

INTER OFFICE MEMO

TO: MATSUSHIMA, BENNETT, FORSYTH, KEITH DATE: JUNE 11, 1995

FROM: DOUGLAS B. SPELTS DBS

SUBJECT: CRUDE OIL SPILL AT #1 OLD CRUDE UNLOADING DOCK

At 1:20 A.M. on June 11, 1995 Glen Friedly notified me of a crude oil spill on the #1 old crude unloading dock. The spill is anywhere from 20 to 100 BBLs of crude oil and it appears to be Southeast Crude. The spill goes from the crude unloading dock to 'D' dock and all the way down to the pumper's shack.

Only 2 drivers delivered to the old dock tonight and they were the following:

Driver-Kevin, Company-CRC, Tractor # 9230, Dock 1-2, Time in 23:28, Time out 23:53, Gravity 50.5 @ 58 degrees.

Driver-Jake, Company-SPC, Tractor # 3652, Dock-blank, Time in 24:46, Time out 01:28, Gravity 42 @ 110 degrees.

The apparent driver, from the tire tracks left from driving through the spill, started unloading on #1 dock, somehow had a spill, unhooked and backed up and went to #2 dock and unloaded. The tracks were witnessed by Pace, Pelz, Hayes, Friedly, and myself. The driver was at #2 dock when I went down to investigate the spill and he immediately left. Guessing from the time of the incident it appears to be the driver Jake from SPC.

Attachment E

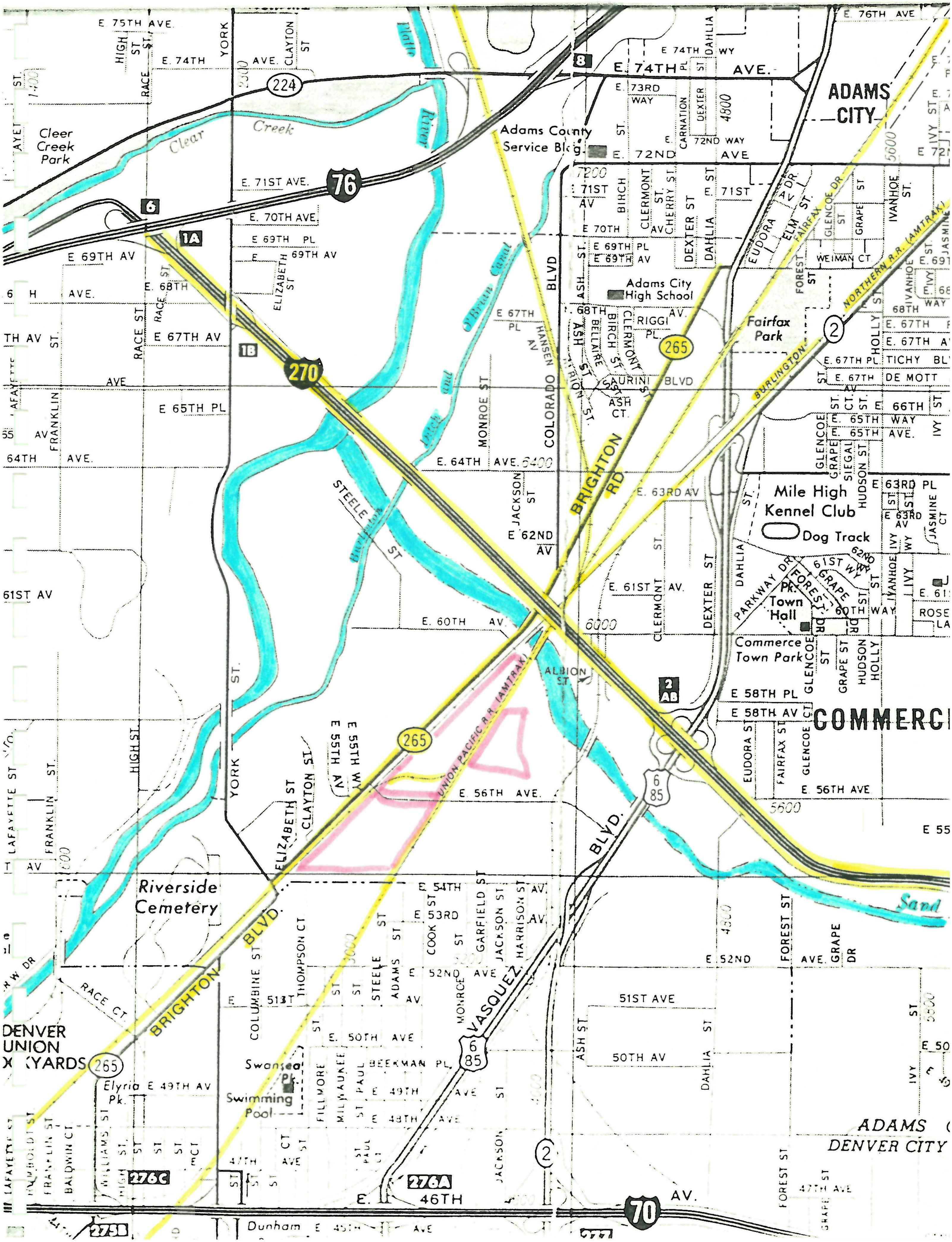
EXERCISES, DRILLS, AND TRAINING TIMELINE

HAZMAT TEAM TIMELINE FOR 1995

who is involved	Topics:								
Jerry/Mike	Trailer agenda								
Haz./Reidel	Meet with Reidel		Complete 5/24						
Mike					Oil Spill School				
Corp./Mike			Alma Tabletop						
J.B./R.M./M.M.	Buy HAZMAT trailer and buy equipment to fill it								
Hazmat Team	Make up three senarios for HAZWOPER refresher			Complete 7/13					
Haz./Safe/Reidel				Half done 6/11	Two equipment deployment exercises (one with Reidel)				
Haz./Safety				One tabletop exercise					
Haz./Safety				1/4 done 7/5/95	Four individual notification exercises				
	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER

Attachment F

AREA MAPS



E. 76TH AVE
E. 75TH AVE.
E. 74TH AVE.
E. 74TH AVE.
E. 74TH DAHLIA WY
ADAMS CITY
224
76
270
265
6
85
2
70
Clear Creek
Cleer Creek Park
Platte River
Adams County Service Bldg.
E. 73RD WAY
E. 72ND AVE
E. 72ND WAY
E. 71ST AVE.
E. 70TH AVE.
E. 69TH PL
E. 69TH AV
E. 68TH
E. 67TH AV
E. 65TH PL
E. 64TH AVE.
E. 63RD AV
E. 62ND AV
61ST AV
E. 61ST AV.
E. 60TH AV.
E. 58TH PL
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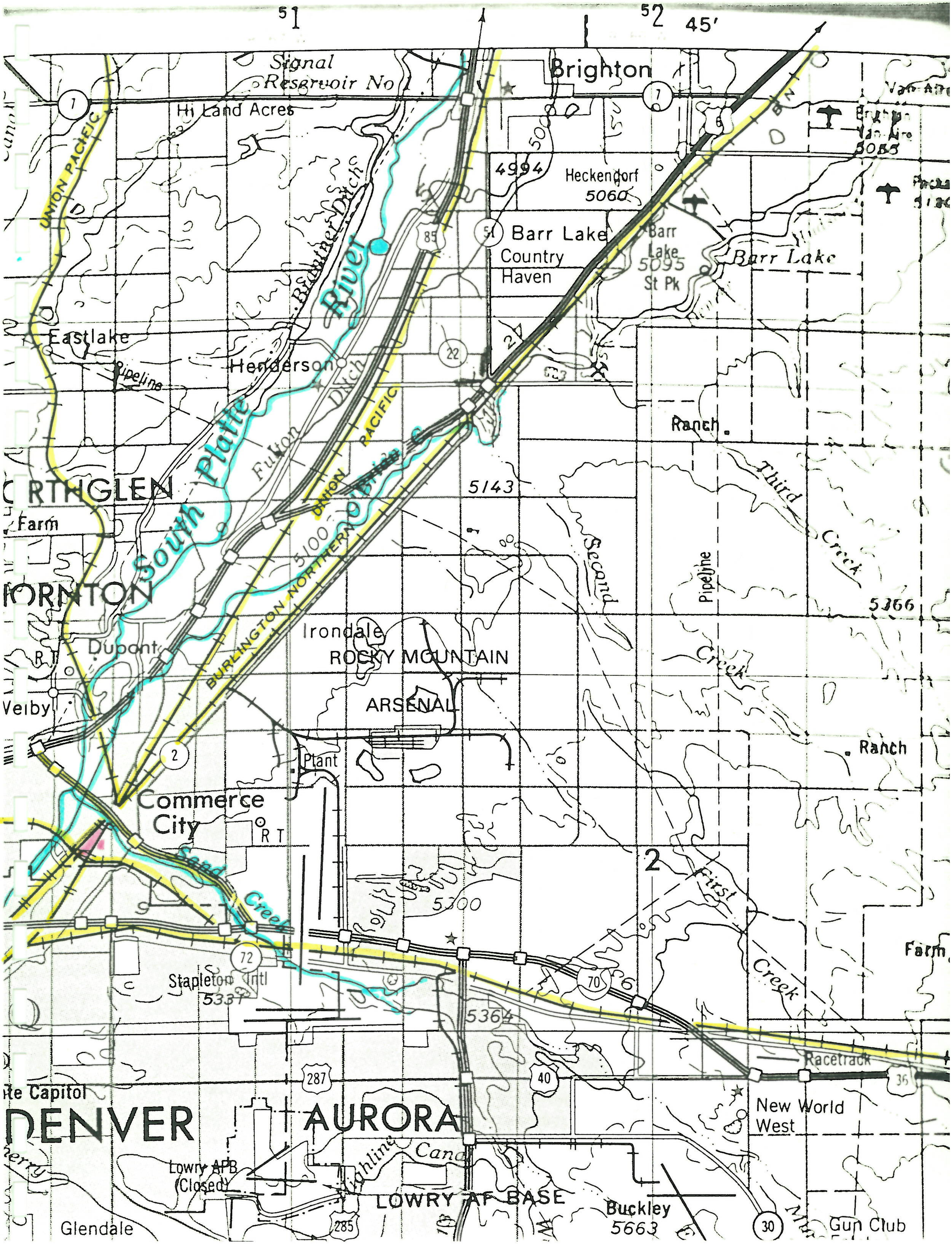
E. 55TH WY
E 55TH AV
E. 54TH
E. 53RD
E. 52ND AVE
51ST AVE
E. 51ST
E. 50TH AVE
50TH AV
E 49TH AV
E. 49TH AVE
E. 48TH AVE
47TH AVE
E. 46TH AV.
Dunham
Adams City High School
Fairfax Park
BURLINGTON NORTHERN R.R. (AMTRAK)
Mile High Kennel Club
Dog Track
Town Hall
Commerce Town Park
COMMERCE
O'Brian Canal
Burlington Ditch and Canal
STEELE ST
UNION PACIFIC R.R. (AMTRAK)
COLORADO BLVD
BRIGHTON RD
BRIGHTON BLVD.
VASQUEZ BLVD.
YORK ST.
HIGH ST
RACE ST
FRANKLIN ST.
LAFAYETTE ST
ELIZABETH ST
CLAYTON ST
MONROE ST
JACKSON ST
DEXTER ST
DAHLIA
EUDORA
FOREST ST
GLENCOE
GRAPE ST
HUDSON ST
HOLLY
IVANHOE
IVY ST
JASMINE CT
Riverside Cemetery
DENVER UNION STOCKYARDS
Elyria Pk.
Swansea Pk.
Swimming Pool
Sand Creek
ALBION ST.
RIGGI PL.
SAURINI BLVD
ADAMS CITY
DENVER CITY
1A
1B
2AB
276C
276A
275B


51
52
45'
Signal Reservoir No 1
Brighton
7
Hi Land Acres
UNION PACIFIC
4994
Heckendorf
5060
85
51
Barr Lake
Country
Haven
Barr Lake
5095
St Pk
Barr Lake
River
Eastlake
Henderson
22
Pipeline
Fulton Ditch
South Platte
PACIFIC
UNION
RTHGLEN
Farm
5143
Ranch
Third Creek
5100
BURLINGTON NORTHERN
Second
Pipeline
ORNTON
5366
Irondale
ROCKY MOUNTAIN
ARSENAL
Dupont
Welby
Creek
2
Ranch
Plant
Commerce City
R T
Sand Creek
2
First Creek
5300
72
70
Farm
Stapleton Intl
5331
5364
Creek
Racetrack
287
40
36
te Capitol
DENVER
AURORA
New World West
Lowry AFB (Closed)
Highline Canal
LOWRY AF BASE
Buckley
5663
Glendale
285
30
Gun Club